

icountPD

Online Particle Detector

For mineral oil, aggressive fluids or fuels
(ATEX approved version available. See page 476)



Independent monitoring of system contamination trends

The icountPD Particle Detector from Parker represents the most up to date technology in particle detection. The design dynamics, attention to detail and moulding compactness of the permanently mounted, on-line particle detector module, combined with on-board, laser based, leading-edge technology, brings to all industries a truly revolutionary, particle detector as a remarkable cost effective market solution to fluid management and contamination control.



icountPD for mineral oil applications

Contact Information: Product Features:

Parker Hannifin
Hydraulic Filter Division Europe

**European Product
Information Centre**
Freephone: 00800 27 27 5374
**(from AT, BE, CH, CZ, DE, EE, ES,
FI, FR, IE, IT, PT, SE, SK, UK)**
filtrationinfo@parker.com

www.parker.com/hfde

- Independent monitoring of system contamination trends.
- Warning LED or digital display indicators for Low, Medium and High contamination levels.
- Visual indicators with power and alarm output warnings.
- Moisture %RH indicator (optional).
- Cost effective solution to prolong fluid life and reduce machine downtime.
- M12 8 pin or Deutsch Connector options.
- Continuous performance for prolonged analysis.
- Fuel, Hydraulic and phosphate Ester fluid compatible construction.
- Self diagnostic software.
- Full PC/PLC integration technology such as:- RS232 and 0-5Volt, 4-20mA, CAN(J1939) (Contact Parker for other options).
- Set up and Data logging support software included.

icountPD

Online Particle Detector

Features & Benefits

Diagnostic Self Check Start-up Time:

Customer selectable 5-900 seconds

Measurement Period:

5 to 180 seconds

Reporting interval through RS232:

0 to 3600 seconds

Digital -/LED display update time:

Every second

Limit Relay Output:

Changes occur +/- 1 ISO code at set limit (Hysteresis ON) or customer set (Hysteresis OFF)

Particle / % RH Output Signal:

Continuous

Principle of operation:

Laser diode optical detection of actual particulates

International Codes:

ISO 7 – 22, NAS 0 – 12

Calibration:

By recognised online methods confirmed by the relevant ISO procedures

MTD – Via a certified primary ISO 11171 automatic particle detector using ISO 11943 principles, with particle distribution reporting to ISO 4406:1996

ACFTD – Conforming to ISO 4402 principles with particle distribution reporting to ISO 4406:1996

Recalibration:

Contact Parker Hannifin

Performance:

+/- 1 ISO Code (Dependant on stability of flow)

Reproducibility / Repeatability:

Better than 1 ISO Code

Power Requirement:

Regulated 9 to 40Vdc

Current Rating:

Typically 120mA

Hydraulic Connection:

Mineral M16x2 test Points

Aggressive: 5/8" BSF test Points

Fuel: No test Points 1/8 BSP (Female) Ports (Plugged)

Required Flow Range through the icountPD:

40 to 140 ml/min (Optimum Flow = 60ml/min)

Online Flow Range via System 20 Inline Sensors (Hydraulic systems only):

Size 0 = 6 to 25 l/min - (Optimum Flow = 15 l/min)

Size 1 = 24 to 100 l/min - (Optimum Flow = 70 l/min)

Size 2 = 170 to 380 l/min - (Optimum Flow = 250 l/min)

Required Differential Pressure across Inline Sensors:

0.4 bar (Minimum)

Viscosity Range:

1-500 cSt

Temperature:

Ambient storage temperature -20°C to +40°C (-4°F to +104°F)

Environment operating temperature +5°C to +60°C (+41°F to +140°F)

Fluid operating temperature +5°C to +80°C (+41°F to +176°F)

Working pressure:

2 to 420 bar (30-6000 PSI)

Moisture sensor calibration (Not offered with the fuel version):

±5% RH (over compensated temperature range of +10°C to +80°C)

(+50°F to +176°F)

Operating humidity range:

5% RH to 100% RH

Moisture sensor stability:

±0.2% RH typical at 50% RH in one year

Certification:

IP66 rated. Refer to the EC Declaration of Conformity.

EMC/RFI – EN61000-6-2:2001

EN61000-6-3:2001

Materials:

User friendly Abs construction.

Stainless Steel hydraulic block.

Dimensions:

182mm x 155mm x 86mm (7.2" x 6.1" x 3.4")

Weight:

1.3kg (2.9lb)

Seals:

Mineral: Fluorocarbon. Aggressive: EPDM. Fuel: Fluorocarbon.

Computer Compatibility:

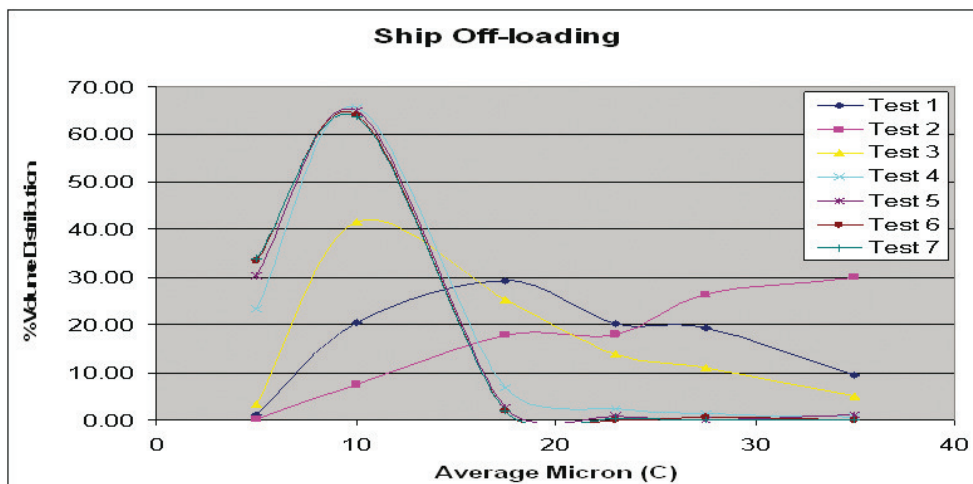
Parker recommends the use of a 9-way D-type connector. This can be connected to a USB port using a USB-serial adaptor. Note that these connectors/adaptors are **NOT** supplied with icountPD units: contact Parker Hannifin for advice.

icountPD for use with aviation fuels

Field Data - Major International Airport

First 3 measurements represent fuel from a previous cargo followed by a regular clean delivery, thus demonstrating the range of fuel cleanliness being experienced at this particular location.

	>4μ	>6μ	>14μ	>21μ		>4μ	>6μ	>14μ	>21μ
Test 1	81058.3	62126.1	17817.6	6066.2	Test 5	1226.1	261.5	2.4	0.4
Test 2	87834.5	74763.0	35454.1	18044.4	Test 6	1085.7	210.9	1.3	0.1
Test 3	51383.4	32796.9	4424.8	1213.4	Test 7	1037.9	198.7	1.3	0.1
Test 4	1593.3	422.7	9.6	1.7					

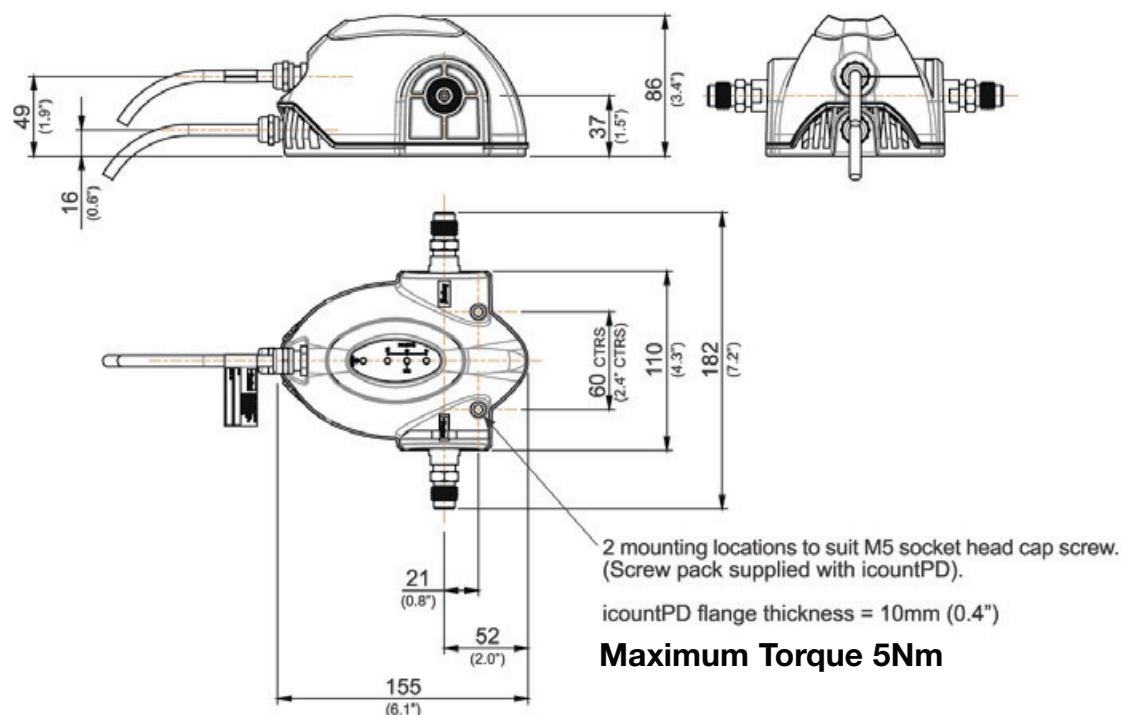


icountPD for use with aviation fuels



Dimensions / Installation Details

mm
(inches)



Typical Applications

- **Mobile Equipment**

- o Earth Moving Machinery
- o Harvesting
- o Forestry
- o Agriculture

Monitoring of the hydraulics, enabling the vehicles to function to their best capability under load conditions through pistons, servo valves, control rams and gear pumps.

- **Industrial Equipment**

- o Production Plants
- o Fluid Transfers
- o Pulp & Paper
- o Refineries

To monitor the cleanliness of the equipment throughout the production line, from the machine tool controlled hydraulics through to contamination of fluid transfer. Ensuring the integrity of the fluid is maintained throughout the refining process.

- **Power Generation**

- o Wind Turbines
- o Gearboxes
- o Lubrication Systems

With continuous monitoring the optimum level is achieved in the least amount of time.

- **Maintenance**

- o Test Rigs
- o Flushing Stands

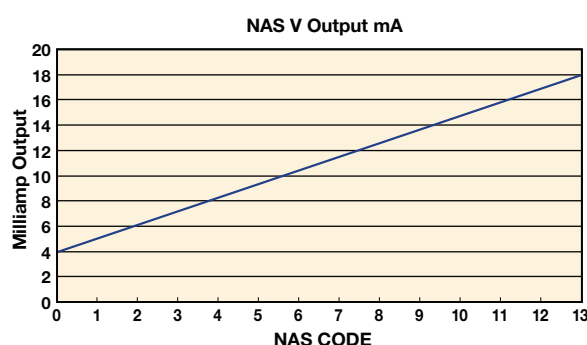
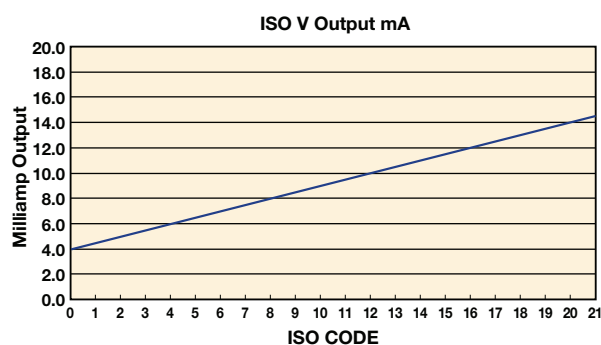
To increase efficiency of your equipment by continuously monitoring the cleanliness level of the hydraulic fluid.

- **Fuel Contamination Detection**

- o Fuel Storage Tanks
- o Vehicle fuel tanks
- o Uploading fuel into an aircraft

24/7 detection of particulate levels in most fuels including aviation fuel - Jet A-1 fuel specification.

Variable mA output settings



The following table can be used to equate the analogue output to an ISO or NAS Code.

Example ISO code 12 is equal to 10mA

mA	ISO	mA	NAS
4.0	0	4	00
4.5	1	5	0
5.0	2	6	1
5.5	3	7	2
6.0	4	8	3
6.5	5	9	4
7.0	6	10	5
7.5	7	11	6
8.0	8	12	7
8.5	9	13	8
9.0	10	14	9
9.5	11	15	10
10.0	12	16	11
10.5	13	17	12
11.0	14	18	**
11.5	15	19	**
12.0	16	20	ERROR
12.5	17		
13.0	18		
13.5	19		
14.0	20		
14.5	21		
15.0	**		
15.5	**		
16.0	**		
16.5	**		
17.0	**		
17.5	**		
18.0	**		
18.5	**		
19.0	OVERRANGE		
19.5	OVERRANGE		
20.0	ERROR		

The following table can be used to equate the analogue output to an ISO or NAS Code.

Example ISO code 12 is equal to 10mA

4-20mA output settings

ISO Setting

mA current = (ISO Code / 2) + 4 eg. 10mA = (ISO 12 / 2) + 4

or

ISO Code = (mA current - 4) * 2 eg. ISO 12 = (10mA - 4) * 2

NAS Setting

mA current = NAS Code + 5 eg. 15mA = NAS 10 + 5

or

NAS Code = mA current - 5 eg. NAS 10 = 15mA - 5

Variable voltage output settings

The variable voltage output option has the capability of two different voltage ranges: a 0–5Vdc range as standard, and a user-selectable 0–3Vdc range. The 'Full list of commands' on how to change the voltage output, are available from Parker.

The following tables can be used to relate the analogue output to an ISO or NAS code.

For example, in a 0–5Vdc range, ISO code 16 is equal to an output of 3.5Vdc. In a 0–3Vdc range, ISO code 8 is equal to an output of 1.0Vdc.

Table relating ISO codes to Voltage output

ISO	Err	0	1	2	3	4	5	6	7	8	9	10	11	>
0–5Vdc	<0.2	0.3	0.5	0.7	0.9	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5	
0–3Vdc	<0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	

cont.

ISO	12	13	14	15	16	17	18	19	20	21	22	Err
0–5Vdc	2.7	2.9	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7	>4.8
0–3Vdc	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	>2.45

Table relating NAS codes to Voltage output

NAS	Err	00	0	1	2	3	4	5	6	7	8	9	10	11	12	Err
0–5Vdc	<0.4	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.5	>4.6
0–3Vdc	<0.2	N.S.	0.3	0.5	0.7	0.9	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.7	>2.8

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Online Particle Detector

Digital display parameters (ISO 4406/NAS 1638)

Start up

1. Once the icountPD has been connected to a regulated power supply, the product logo is displayed for approximately five seconds as the icountPD performs a self system diagnostic check.
2. The icountPD then automatically starts monitoring using factory default test parameters.



Digital display indication

The digital display will show the actual measured codes, the channel (μ) size and the user definable limits. Note that the channel size and limits are displayed alternately.

The Moisture Sensor reading (%RH) will also be shown – if the Moisture Sensor option is fitted.

The order of trigger for both the codes and Moisture Sensor option is:

- Solid digit(s) = code(s) that are at or below the set point (limit)
- Flashing digit(s) = code(s) that are above the set point (limit)

The display for ISO4406 and NAS1638 are identical.

Error detection:

In the unlikely event of a error occurring, the digital display on the icountPD will simply display the actual error code only – i.e. ERROR 13 (A full list of error codes are detailed in the icountPD User Manual).

Moisture sensor output settings

The Moisture Sensor is an option that can be included when ordering the icountPD.

The Moisture Sensor reports on the saturation levels of the fluid passing through the icountPD sensing cell. The output is a linear scale, reporting within the range of 5% saturation to 100% saturation.

Table relating Saturation levels in the sensing cell to icountPD outputs

Saturation	4–20mA	0–3Vdc	0–5Vdc
5%	4.8	0.15	0.25
25%	8	0.75	1.25
50%	12	1.50	2.50
75%	16	2.25	3.75
100%	20	3.00	5.00

Flow control ACC6NN019

A pressure compensated, flow control device (Parker Hannifin part number ACC6NN019) has been developed to give the icount PD greater flexibility.

The flow control device enables testing where flow ranges are outside the icountPD specification i.e. (40 – 140 ml/min), or where pipe diameters do not allow the icountPD to be installed.

The flow control device fits onto the downstream (outlet) side of the icountPD. A 06L EO 24 deg cone and hydraulic adaptor is supplied which enables connection directly to the icountPD. Alternatively the flow control device can be fitted further downstream.

The compact design requires no setting up or further user intervention as long as the system conditions remain within the recommended pressure and viscosity ranges as below.



P/N ACC6NN019

Working pressure range	10 to 300 bar
Differential pressure range	10 to 300 bar
Working viscosity range	10 to 150 Cst

icontains – Oil Sampler (IOS)

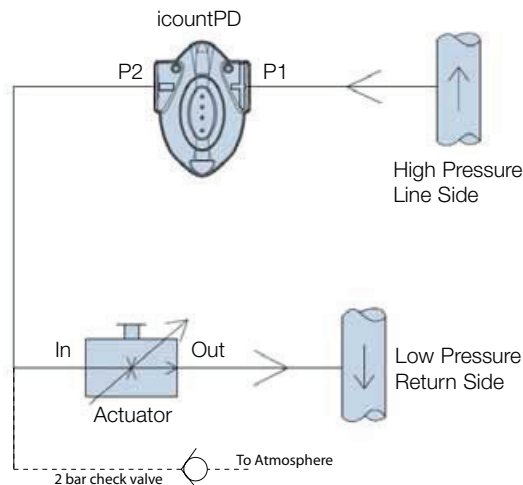
- New and under development in the detection of contaminates distribution in various Aviation fuels.
- Portable monitoring tool providing fluid qualification to ISO 4406:1999 standards.
- Supplements the icount LCM20 and ACM20 product portfolio.
- Quick, simple to use monitoring tool for sampling fluids from containers, fuel bunkers and holding tanks.
- Field solution to Laboratory methods for the detection of solid contamination and free water inference.



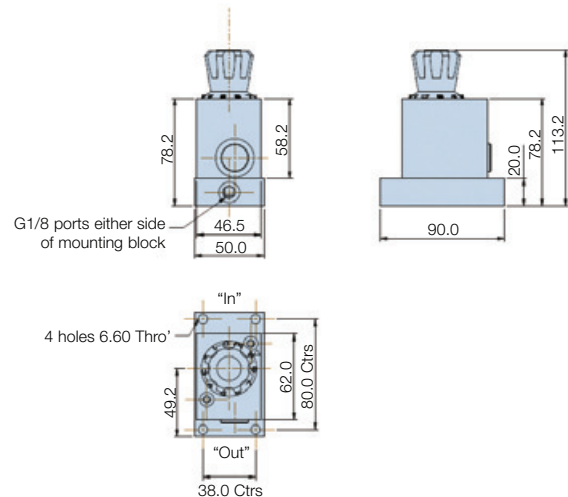
icountPD

Online Particle Detector

Hydraulic Connection Diagram



Dimensions



Flow Control Actuator Specification (P/N S840074)

Operation

Manual flow rate adjustable via control knob

Mounting Type

4 off mounting holes to suit M6 screws (not supplied)

Mounting position

Any

Weight

1.7kg (3.7lb)

Fluid Temperature

5°C to +80°C (+41°F to 176°F)

Ambient storage temperature

-20°C to +40°C (-4°F to +104°F)

Viscosity range

20cSt to 500cSt (If lower than 20cSt contact Parker)

Differential pressure range

5 to 315 bar

Maximum pressure

315 bar

Flow direction

'IN' to 'OUT' flow control function

Port thread detail

1/8" BSP (test points not supplied)

Internal Seals

Fluoroelastomer

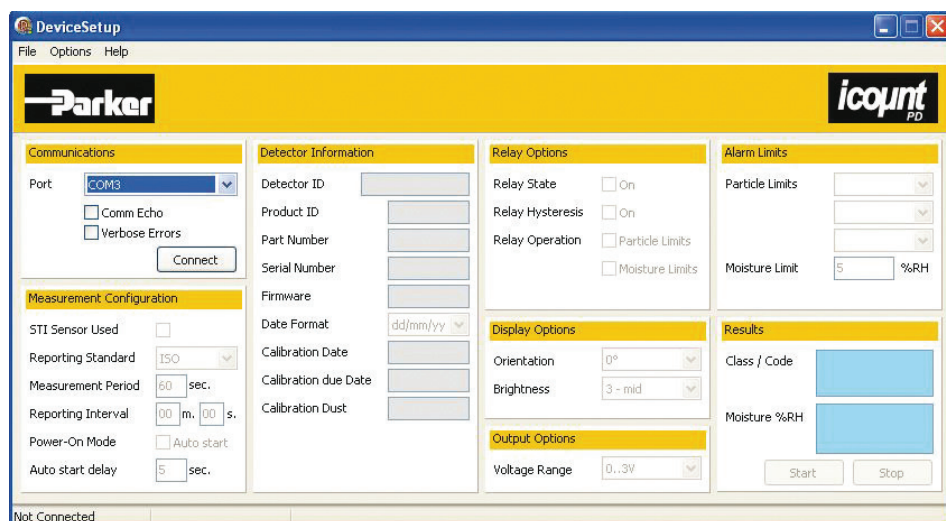


This application shows uploading fuel into an aircraft with the icountPD in use to monitor as a 'go/no go' device.

Communication Options

The icountPD may be configured using the icountPD Setup Utility. For more direct control of the device using its communications protocol, you may also use the Microsoft Windows® HyperTerminal program, but note that this program is not currently supplied with the Windows Vista™ operating system. These two ways of communicating with icountPD are described in the following section.

icountPD Setup Utility software (supplied)



Communication Protocol

The Communication protocol for the serial communication link is to be used with **Microsoft Windows HyperTerminal**. The settings are as follows:

Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Flowcontrol	None

The commands used with this product are made up of Read, Set and Start / Stop commands.

- Set commands allow the value or values of parameters to be set
- Read commands allow the value or values or parameters to be read
- Start/Stop allows the user to start and stop tests.

Example:

[SDF dd/mm/yy] - sets the date format.

[RDF] - reads the product date format.

All commands are sent in ASCII characters, and the protocol accepts both upper and lower case characters as the examples below:

SDF

SdF

Note: A full list of commands are detailed in the user manual

icountPD

Online Particle Detector

Ordering Information

Standard Products Table

Part number	Fluid type	Calibration	Display	Limit relay	Communication	Moisture	Cable connector kit
IPD12222130	Mineral	MTD	LED	YES	RS232 / 4 - 20mA	NO	M12, 8 pin plug connector
IPD12222230	Mineral	MTD	LED	YES	RS232 / 4 - 20mA	YES	M12, 8 pin plug connector
IPD12223130	Mineral	MTD	LED	YES	RS232 / 0 - 5V	NO	M12, 8 pin plug connector
IPD12223230	Mineral	MTD	LED	YES	RS232 / 0 - 5V	YES	M12, 8 pin plug connector
IPD12322130	Mineral	MTD	Digital	YES	RS232 / 4 - 20mA	NO	M12, 8 pin plug connector
IPD12322230	Mineral	MTD	Digital	YES	RS232 / 4 - 20mA	YES	M12, 8 pin plug connector
IPD12323130	Mineral	MTD	Digital	YES	RS232 / 0 - 5V	NO	M12, 8 pin plug connector
IPD12323230	Mineral	MTD	Digital	YES	RS232 / 0 - 5V	YES	M12, 8 pin plug connector

Product Configurator

Key	Fluid type	Calibration	Display	Limit relay	Communication	Moisture	Cable connector kit
IPD	1 Mineral	2 MTD	2 LED	2 Yes	2 RS232 / 4-20mA	1 No	10 Deutsch 12-pin DT Series connector
	2 Phosphate ester		3 Digital		3 RS232 / 0-5V	2 Yes	30 M12, 8 pin plug connector
	3 Aviation fuel (4 channel)				5 RS232/CAN-bus (J1939)		

Note - Aviation Fuel option can also be used for Diesel fluids
 Note - RS485 option - communication up to 5000 Meters - Contact Parker
 Note - Wireless communication (GPRS - LAN - WIFI - Sat) - Contact Parker

Accessories

Part number	Description
Mineral fluids	Aggressive fluids
ACC6NE003	ACC6NN002
ACC6NN003	ACC6NN004
ACC6NN005	ACC6NN006
ACC6NN007	ACC6NN008
ACC6NN009	ACC6NN010
ACC6NN011	ACC6NN012
SPS2021	SPS2061
S840074	Contact Parker
ACC6NN019	Contact Parker
ACC6NN013	12 volt regulated power supply
ACC6NN014	Contact Parker
ACC6NN016	Deutsch Connector Kit
ACC6NN017	RS232 To USB cable kit
ACC6NN018	M12 - 8 pin to RS232 engineers tool

* M12 Cable kit consists of two 5 metre cables to enable all output options
 (Communications cable and Relay/Power Supply cable)
 ** Note that the aggressive fluid hoses are provided as a single hose, not in pairs.
 Note: For details on the icountPD Z2 ATEX approved particle detector see page 457.

Part number	Supersedes	Size	Flow range l/min	Fluid type	Port threads	Reverse Flow capability
STI0144100	STI.0144.100	0	6-25	Mineral	3/8	Yes
STI1144100	STI.1144.100	1	20-100	Mineral	3/4	Yes
STI2144100	STI.2144.100	2	80-380	Mineral	1 1/4	Yes
STI0148100	STI.0148.100	0	6-25	Aggressive	3/8	Yes
STI1148100	STI.1148.100	1	20-100	Aggressive	3/4	Yes
STI2148100	STI.2148.100	2	80-380	Aggressive	1 1/4	Yes
STS5117210	STS.5117.210	1	20-100	Mineral	3/4	No
STS5217210	STS.5217.210	2	80-380	Mineral	1 1/4	No

icountPDR

Robust Online Particle Detector



Customer Value Proposition

The icountPDR Robust Particle Detector from Parker represents the most up to date technology in particle detection. The design dynamics, attention to detail and moulding compactness of the permanently mounted, on-line particle detector module, combined with on-board, laser based, leading-edge technology, brings to all industries a truly revolutionary, particle detector as a remarkable cost effective market solution to fluid management and contamination control.



icountPDR for mineral oil applications

Contact Information: Product Features:

Parker Hannifin
Hydraulic Filter Division Europe

**European Product
Information Centre**
Freephone: 00800 27 27 5374
**(from AT, BE, CH, CZ, DE, EE, ES,
FI, FR, IE, IT, PT, SE, SK, UK)**
filtrationinfo@parker.com

www.parker.com/hfde

- Independent monitoring of system contamination trends.
- Rugged design ensures protection against environmental exposure.
- Small and compact device constructed in SS.
- Moisture %RH indicator (optional).
- Cost effective solution to prolong fluid life and reduce machine downtime.
- Continuous performance for prolonged analysis.
- Fuel, Hydraulic and phosphate Ester fluid compatible construction.
- Self diagnostic software.
- Full PC/PLC integration technology such as:- RS232 and 0-5Volt, 4-20mA, CAN(J1939) (Contact Parker for other options).
- Set up and Data logging support software included.

icountPDR

Robust Online Particle Detector

Feature

Product start-up time
Measurement Period
Reporting interval
Principle of operation
International Codes
Calibration

Recalibration
Working pressure
Flow Range through the icountPDR

Online Flow Range via System 20 Sensors

Ambient storage temperature
Environment operating temperature
Fluid operating temperature
Computer Compability

Moisture sensor calibration

Operating humidity range
Moisture sensor stability
Power Requirement
Current Rating
Certification

Analogue output options (specified when ordering)

Variable current
Variable voltage
CAN-bus
Moisture sensor

Specification

5 seconds minimum
5 to 180 seconds
0 to 3600 seconds via RS232 communication
Laser diode optical detection of actual particulates
ISO 7 – 22, NAS 0 – 12
By recognised online methods confirmed by the relevant ISO procedures:
MTD – Via a certified primary ISO 11171 automatic particle detector using ISO 11943 principles, with particle distribution reporting to ISO 4406:1996
Contact Parker Hannifin
2 to 420 bar (30-6000 PSI)
Note: Flow may be bi-directional
40 to 140 ml/min (Optimum Flow 60ml/min)
(0.01 – 0.04 USGPM (optimum flow 0.016 USGPM))
Size 0 = 6 to 25 l/min (2-7 USGPM)
Size 1 = 24 to 100 l/min (6-26 USGPM)
Size 2 = 170 to 380 l/min (45-100 USGPM)
-40°C to +80°C (-40°F to +176°F)
-30°C to +60°C (-22°F to +140°F)
+5°C to +80°C (+41°F to +176°F)
Parker recommends the use of a 9-way D-type connector. This can be connected to a USB port using a USB-serial adaptor. Note that these connectors/adaptors are **NOT** supplied with icountPDR units: contact Parker Hannifin for advice.
±5% RH (over compensated temperature range of +10°C to +80°C; (+50°F to +176°F)
5% RH to 100% RH
±0.2% RH typical at 50% RH in one year
Regulated 9 to 40Vdc
Typically 120mA
IP69K rating.
EC Declaration of Conformity

4–20mA
0–5Vdc, 0–3Vdc (user selectable)
to SAE J1939 (e.g. Parker IQAN)
Linear scale within the range 5% RH to 100% RH

Flow control

LOW TO MEDIUM VISCOSITY FLOW CONTROL OPTION

A pressure compensated, flow control device (Parker Hannifin part number ACC6NN023) has been developed to give the icountPDR user greater flexibility. The flow control device enables testing where flow ranges are outside the icountPDR specifications (i.e. 40–140 ml/min), or where pipe diameters do not allow the icountPDR to be installed.

The flow control device fits onto the downstream (outlet) side of the icountPDR. A 06L EO 24deg cone end hydraulic adaptor is supplied which enables connection directly to the icountPDR. Alternatively the flow control device can be fitted further down stream.

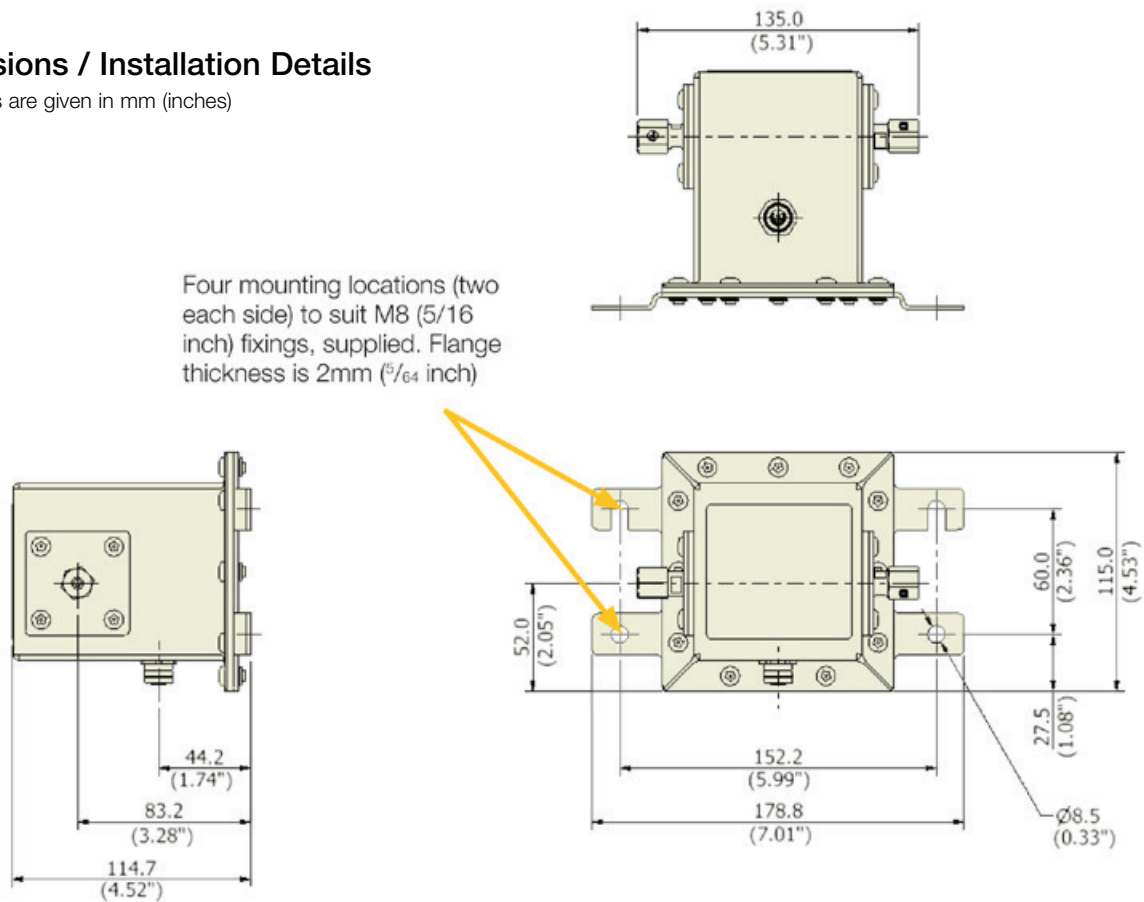
The compact design requires no setting up or further user intervention as long as the system conditions remain within the recommended pressure and viscosity ranges as below.



Working pressure range	10 to 300bar
Differential pressure range	10 to 300bar
Working viscosity range	10 to 150 Cst

Dimensions / Installation Details

Dimensions are given in mm (inches)



Typical Applications

• Mobile Equipment

- o Earth Moving Machinery
- o Harvesting
- o Forestry
- o Agriculture

Monitoring of the hydraulics, enabling the vehicles to function to their best capability under load conditions through pistons, servo valves, control rams and gear pumps.

• Industrial Equipment

- o Production Plants
- o Fluid Transfers
- o Pulp & Paper
- o Refineries

To monitor the cleanliness of the equipment throughout the production line, from the machine tool controlled hydraulics through to contamination of fluid transfer. Ensuring the integrity of the fluid is maintained throughout the refining process.

• Power Generation

- o Wind Turbines
- o Gearboxes
- o Lubrication Systems

With continuous monitoring the optimum level is achieved in the least amount of time.

• Maintenance

- o Test Rigs
- o Flushing Stands

To increase efficiency of your equipment by continuously monitoring the cleanliness level of the hydraulic fluid.

• Fuel Contamination Detection

- o Fuel Storage Tanks
- o Vehicle fuel tanks
- o Uploading fuel into an aircraft

24/7 detection of particulate levels in most fuels including aviation fuel - Jet A-1 fuel specification.

icountPDR

Robust Online Particle Detector

Connections

Variable current output settings

See page 440 (icountPD) for tables and graphs that can be used to relate an analogue output (in mA) to an ISO and NAS code.

Variable voltage output settings

See page 440 (icountPD) for tables that can be used to relate the analogue output to an ISO and NAS code.

Ordering Information

Product Configurator

Key	Fluid type		Calibration		Display		Limit Relay		Communication		Moisture sensor		Cable connector kit	
IPDR	1	Mineral	2	MTD	1	None	1	No	2	RS232 / 4-20mA	1	No	40	M12, 12 pin plug connector
	3	Aviation fuel (4 channel)							3	RS232 / 0-5V	2	Yes	10	Deutsch 12-pin DT series connector
									5	RS232/CAN-bus				

Standard Products Table

Part number	Fluid type	Calibration	Display	Limit relay	Communication	Moisture	Cable connector kit
IPDR12112140	Mineral	MTD	None	No	RS232 / 4 - 20mA	No	M12, 12 pin plug connector
IPDR12112240	Mineral	MTD	None	No	RS232 / 4 - 20mA	Yes	M12, 12 pin plug connector
IPDR12113140	Mineral	MTD	None	No	RS232 / 0 - 5V	No	M12, 12 pin plug connector
IPDR12113240	Minera	MTD	None	No	RS232 / 0 - 5V	Yes	M12, 12 pin plug connector

Accessories

Part number	Description
ACC6NN013	12Volt regulated power supply EUR, UK, USA Set
ACC6NN023	Flow control valve, industrial fittings tube 06L-G1/8A-M16 connector
ACC6NN017	1m RS232 TO USB CABLE KIT
ACC6NN024	5m M12 - 12 PIN CABLE FEMALE
ACC6NN035	M12 12 PIN - 12 PIN Deutsche cable